



## Heat-related illnesses

Ensure your workforce is protected from extreme heat

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The weather affects decisions roofing professionals make every day. In fact, work often is suspended as a result of a threat of inclement weather. However, suspending work because it is too hot rarely occurs in the roofing industry.

Heat should be considered as serious a threat to roofing work as rain; the difference between rain and heat is heat presents a potential health risk. As we approach the hottest and most humid time of the year, it is important to ensure your workers return home safely at the end of the day.

### Background

Heat-related illnesses are a real threat to your workforce. In 2014, the Occupational Safety and Health Administration (OSHA) reported 18 workers died and 2,630 workers suffered from heat-related illnesses. In 2015, during its third year of promoting its heat-illness prevention campaign, OSHA issued stiff penalties to companies exposing workers to the risks of heat-related illnesses.

For example, in 2015, a roofing contracting company was fined more than \$6,000 for violating the general duty clause when it exposed workers to heat-stress conditions. Because OSHA does not have a specific regulation regarding heat exposure, it uses the general duty clause, Section 5(a)(1), which requires employers provide their workers protection from recognizable safety hazards while at work.

To protect your workers, it is important to understand the risks of extreme heat. When a person works in a hot environment, his or her body needs to cool itself to remain stable. Roofing workers typically are at a higher risk of heat-related illnesses because they spend a majority of their time outdoors. The heat index (a temperature value based on temperature and humidity) takes into account how air temperature and humidity will increase and determines what it truly feels like outdoors. Pay close attention to the heat index before exposing workers to potential danger.

Other contributing factors roofing professionals should consider when working in extreme heat include direct sunlight, rooftop reflectivity, highly physical workloads and bulky personal protective equipment.

### Heat-related illnesses

The human body controls heat by circulating blood to the skin,

and perspiration cools the skin. When outside temperatures soar, the body can have a difficult time cooling itself. Also, as humidity rises, cooling a body becomes more challenging because sweating becomes ineffective. When this happens, the following heat-induced illnesses can occur:

- *Heat rash:* Tiny bumps surrounded by red skin is a common issue arising from excessive moisture (sweating) and the plugging of sweat glands, which leads to inflammation.
- *Heat cramps:* Painful muscle spasms in the arms, legs or stomach during physical labor usually occur from loss of salt from sweating and dehydration.
- *Heat exhaustion:* Weakness, dizziness, nausea, fatigue and headaches usually arise from dehydration and the decrease of blood volume.
- *Heat stroke:* Red, hot, dry skin (sweat may be present in some cases) with elevated temperatures can lead to confusion, loss of consciousness and convulsions.

Elevated temperatures can lead to confusion, loss of consciousness and convulsions

### Prevention and reducing exposure

As with many hazards roofing workers face, heat-related illnesses can be prevented. Engineering controls, work practices, acclimation and education are required to understand how to reduce the risk of exposure to heat-related illnesses.

#### Engineering controls

Engineering controls include air conditioning, fans and shade tents to help control the temperature for exposed workers.

If possible, set up shaded areas in advance and ask the building owner for permission for workers to take breaks indoors. Cooling fans on rooftops or misting units are other possible engineering controls, as well, though costs and risk of potential water entry must be evaluated before use.

#### Work practices

OSHA's heat-related illness prevention program uses the tagline "Water. Rest. Shade." (See Figure 1.) Practices to reduce heat-related illnesses can include



Figure 1: OSHA's tagline to prevent heat-related illnesses

acclimation to the heat; limiting worker outdoor activities to morning and evening hours; and, if possible, setting hours of heavy labor according to weather forecasts.

If your workforce must perform heavy labor, be sure to provide plenty of cool, nonalcoholic fluids throughout the workday. A sports beverage can replace salt and minerals lost through sweating. (If a worker is following a low-salt diet, he or she should first discuss drinking sports beverages with his or her physician.)

Try to set up rest times for workers in shady areas throughout the workday. Protect your workers from the sun by having them wear large-brimmed hats; light-colored, loose-fitting clothing; and shaded safety glasses. Applying sunscreen with SPF 15 or higher also may prevent exposure from the sun's ultraviolet rays. Look for the sweat-proof types of sunscreen—the most effective products say “broad spectrum” or “UVA/UVB protection” on the label. Reapply the sunscreen throughout the day as necessary.

### Acclimation

Workers will adjust to heat if given time. The adjustment time typically takes a few days, but it could take longer to fully acclimate.

Limiting workloads during hot periods and gradually increasing workloads and durations are good practices that allow workers' bodies to adjust to extreme temperatures. Over time, a body will make changes and allow a worker to tolerate the higher temperature extremes.

### Education

Knowing the symptoms of heat-related illnesses, how to prevent them and what to do in an emergency can save lives.

OSHA's campaign aims to raise awareness and educate workers and employers about the dangers of working in hot weather and provides resources and guidance to address these hazards. Workers in outdoor industries, such as roofing, construction, agriculture, landscaping and transportation, are at particular risk.

As a part of any complete safety program, heat-related illness prevention training should include addressing the types of heat-related illnesses; learning how to identify heat-related illnesses; and specific training to prevent heat-related illnesses.

The following resources provide additional information about heat-related illness prevention:

- OSHA's heat-illness web page, [www.osha.gov/heat](http://www.osha.gov/heat)
- *NRCA Toolbox Talks* (pages 75 and 95), available at [shop.nrca.net](http://shop.nrca.net)
- *The NRCA Safety Manual, Third Edition*, Chapter 13—First Aid, available at [shop.nrca.net](http://shop.nrca.net)
- *NRCA Pocket Guide to Safety*, Section 18E, Page 105, available at [shop.nrca.net](http://shop.nrca.net)

In addition, OSHA has created a Heat Safety Tool app (see Figure 2), available at [www.osha.gov/SLTC/heatillness/heat\\_index/heat\\_app.html](http://www.osha.gov/SLTC/heatillness/heat_index/heat_app.html). The app is free, easy and portable and enables workers and supervisors to monitor the heat indexes at their work sites. The app displays a risk level for workers based on the heat index, as well as reminders about protective measures that should be taken at a specific risk level. The app can be downloaded in English and Spanish.



Figure 2: Screen shot from OSHA's Heat Safety Tool app

### Be safe

Heat plays a significant role in how you protect your workforce. The next time you send out workers, the heat should be considered along with inclement weather. For more information about heat-related illness prevention, contact Richard Trewyn, an NRCA director of enterprise risk management, at (847) 299-9070, ext. 7575 or [rtrewyn@nrca.net](mailto:rtrewyn@nrca.net)

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